

SEQUENCE LISTING

<110> Dubcovsky, Jorge
Yan, Liuling
Loukoianov, Artem

<120> GENES RESPONSIBLE FOR VERNALIZATION
REGULATION IN TEMPERATE GRASSES AND USES THEREOF

<130> 514112000320

<150> US 10/412,137

<151> 2003-04-11

<160> 159

<170> FastSEQ for Windows Version 4.0

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<211> 69

<212> DNA

<213> Triticum monococcum

<400> 1

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cctccctc 69

<210> 2

<211> 49

<212> DNA

<213> Triticum monococcum

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<210> 3

<211> 35

<212> DNA

<213> Triticum monococcum

<400> 3

ccttttgccc tggccatct cctctctc cctc 35

<210> 4

<211> 21

<212> DNA

<213> Triticum monococcum

<400> 4

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<210> 5

<211> 735

<212> DNA

<213> Triticum monococcum

<400> 5

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gccgaggtcg gcctcatcat cttctccacc aagggaagc tctacgagtt ctccaccgag 180
tcatgtatgg acaaaattct tgaacggtat gagcgctatt cttatgcaga aaaggttctc 240
gtttcaagtg aatctgaaat tcagggaaac tgggtgtcacg aatataggaa actgaaggcg 300
aaggttgaga caatacagaa atgtcaaaaa catctcatgg gagaggatct tgaatctttg 360
aatctcaagg agttgcagca actggagcag cagctggaaa gctcactgaa acatatcaga 420
tccaggaaga accaacttat gcacgaatcc atttctgagc tgcagaagaa ggagaggtca 480
ctgcaggagg agaataaagt tctccagaag gaactcgtgg agaagcagaa ggcccatgcg 540
gcgcagcaag atcaaaacta gcctcaaacc agctcttctt cttcttcctt catgctgagg 600
gatgctcccc ctgccgcaaa taccagcatt catccagcgg cggcaggcga gagggcagag 660
gatgcggcag tgcagccgca ggccccaccc cggacggggc ttccaccgtg gatggtgagc 720
cacatcaacg ggtga 735
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<210> 6

<211> 734

<212> DNA

<213> *Triticum monococcum*

<400> 6

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gccgaggtcg gcctcatcat cttctccacc aagggaagc tctacgagtt ctccaccgag 180
tcatgtatgg acaaaattct tgaacggtat gagcgctatt cttatgcaga aaaggttctc 240
gtttcaagtg aatctgaaat tcagggaaac tgggtgtcacg aatataggaa actgaaggcg 300
aaggttgaga caatacagaa atgtcaaaaa catctcatgg gagaggatct tgaatctttg 360
aatctcaagg agttgcagca actggagcag cagctggaaa gctcactgaa acatatcaga 420
tccaggaaga accaacttat gcaggatcca tttctgagc gcagaagaag gagaggtcac 480
tgcaggagga gaataaagtt ctccagaagg aactcgtgga gaagcagaag gcccatgagg 540
cgcagcaaga tcaaactcag cctcaaacca gctcttcttc ttcttccttc atgctgaggg 600
atgctcccc tgccgcaaatt accagcattc atccagcggc ggcaggcgag agggcagagg 660
atgcggcagt gcagccgcag gccccacccc ggacggggct tccaccgtgg atggtgagcc 720
acatcaacgg gtga 734
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<210> 7

<211> 244

<212> PRT

<213> *Triticum monococcum*

<400> 7

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1 5 10 15
Arg Gln Val Thr Phe Ser Lys Arg Arg Ser Gly Leu Leu Lys Lys Ala
20 25 30
His Glu Ile Ser Val Leu Cys Asp Ala Glu Val Gly Leu Ile Ile Phe
35 40 45
Ser Thr Lys Gly Lys Leu Tyr Glu Phe Ser Thr Glu Ser Cys Met Asp
50 55 60
Lys Ile Leu Glu Arg Tyr Glu Arg Tyr Ser Tyr Ala Glu Lys Val Leu
65 70 75 80
Val Ser Ser Glu Ser Glu Ile Gln Gly Asn Trp Cys His Glu Tyr Arg
85 90 95
Lys Leu Lys Ala Lys Val Glu Thr Ile Gln Lys Cys Gln Lys His Leu
100 105 110
Met Gly Glu Asp Leu Glu Ser Leu Asn Leu Lys Glu Leu Gln Gln Leu
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<210> 9
 <211> 1017
 <212> DNA
 <213> Triticum monococcum

<400> 9
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 cgggtcggcc aaaagtagaa aaatacactg cgccactca atccacgcag cgcactgcac 180
 tgcacagcaa cgcttcatgt caaaagtcga gctcaagcat gcacgcgatg gacgcggcgc 240
 gaatgacccg ggcggcacga cgcgagtgcc cgccgcgcc gccgcctgc cccgcagccg 300
 acctcttccc aaacgggaca agcgagacgg cccaaaacga gcaaggaaaag cagcctccta 360
 ctgtggcagc ccgccccac gaccgtcatc tcgcttcca ttccattttc cctggacgga 420
 ccagaccgt ccgagccgcc ctgacctagc cagccagcat ttctcttttc gtccccgcc 480
 gccgtgacca aaaaagcaaa aaaggaaaaa gggaaaatgc taaaggaaaa aactccgctc 540
 tttcccttct tctaggccta gggtagagta gaatattata aaaggaaaaa ttctgctcgt 600
 tttttgctct gtgggtgtgtg tttgtggcga gagaaaatga tttggggaaa gcaaaatcgg 660
 gagattcgca cgtacgatcg ttcgacacgt cgacgcccg cgggcccggt gtggggcatc 720
 gtgtggctgc aggaccgcgg ggcgccgcgg ggcgggcccgg gccaatgggt gctcgacagc 780
 ggctatgctc cagaccagcc cggatttgca taccgcgctc ggggccagat ccctttaaaa 840
 acctcgctt tggcctggcc atcctccctc tcctccctc tcttccacct caccacaacca 900
 cctgatagcc atggctccgc cgcctcgctt ccgctgcgc cagtcggagt agcgcgcgcg 960
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<210> 10
 <211> 1036
 <212> DNA
 <213> Triticum monococcum

<400> 10
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 cgggtcggcc aaaagtagaa aaatacactg cgccactca atccacgcag cgcactgcac 180
 tgcacagcaa cgcttcatgt caaaagtcga gctcaagcat gcacgcgatg gacgcggcgc 240
 gaatgacccg ggcggcacga cgcgagtgcc cgccgcgcc gccgcctgc cccgcagccg 300
 acctctccca aacgggacaa gcgagacggc ccaaaacgag caaggaaaag agcctcctac 360
 tgtggcagcc cgcgccacg accgtcatct cgccttccat tccatttttc ctggacggac 420
 cagaccgctc cgagccgccc tgacctagcc agccagcatt tcctctttcg tccccgccg 480
 ccgtgaccaa aaaagcaaaa aaggaaaaag ggaaaatgct aaaggaaaaa actccgctct 540
 ttcccttctt ctaggcctag ggtacagtag aatattataa aaggaaaaat tctgctcgtt 600
 ttttgctctg tgggtgtgtg ttgtggcgag agaaaatgat ttggggaaaag caaaatcggg 660
 agattcgcac gtacgatcgt tcgacacgtc gacgcccgcc gggcccggtg tggggcatcg 720
 tgtggctgca ggaccgcggg gcccgcggg gcgggcccgg ccaatgggtg ctcgacagcg 780
 gctatgctcc agaccagccc ggtattgcat accgcgctcg gggccagatc cctttaaaaa 840
 cccctcccc cctgcgggaa cctcgttttt ggcttgcca tcctccctc cctccctct 900
 cttccacctc acccaaccac ctgatagcca tggctccgcc gcctcgctc cgcctgcgcc 960
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 ttctcgagcg gagatg 1036

<210> 11
 <211> 1036
 <212> DNA
 <213> Triticum monococcum

<400> 11

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cgggtcggcc	aaaagtagaa	aaatacactg	cgccactca	atccacgtag	cgcactgcac	180
tgcacagcaa	cgcttcatgt	caaaagtcga	gctcaagcat	gcacgcgatg	gacgcggcgc	240
gaatgacccg	ggcggcacga	cgcgagtgc	cgccgcgcc	gcccgcctgc	cccgcagccg	300
acctctccca	aacgggacaa	gcgagacggc	ccaaaacgag	caaggaaagc	agcctcctac	360
tgtggcagcc	cgccccacg	accgtcatct	cacctccat	tccattttcc	ctggacggac	420
cagaccgctc	cgagccgccc	tgacctagcc	agccagcatt	tcctctttcg	tccccgcgcg	480
ccgtgaccaa	aaaagcaaaa	aaggaaaaag	ggaaaatgct	aaaggaaaaa	actccgctct	540
ttcccttctt	ctaggcctag	ggtacagtag	aataattataa	aaggaaaaat	tctgctcggt	600
ttttgctctg	tggtgtgtgt	ttgtggcgag	agaaaatgat	ttggggaaag	caaaatcggg	660
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tgtggctgca	ggaccgcggg	gccccgcggg	gcgggcccgg	ccaatgggtg	ctcgacagcg	780
gctatgctcc	agaccagccc	ggtattgcat	accgcgctcg	gggccagatc	cctttaaaaa	840
ccccctcccc	cctgccggaa	ccctcgtttt	ggcctggcca	tcctccctct	cctccccctc	900
cttccacctc	acccaaccac	ctgatagcca	tggtccgcc	gcctcgctc	cgcctgcgcc	960
agtcggagta	gccgtcgcgg	tctgcggggtg	ttggagggtg	ggggcgtagg	gttggcccg	1020
ttctcgagcg	gagatg					1036

<210> 12

<211> 1036

<212> DNA

<213> *Triticum monococcum*

<400> 12

atttgctga	tgagacgctt	gacaacagt	tattgatgga	tgtctggctg	gtatacacgc	60
acagcacagt	acccctactc	ctaggactgg	cgagtatctt	tcattcattc	cagaaatacg	120
cgggtcggcc	aaaagtagaa	aaatacactg	cgccactca	atccacgtag	cgcactgcac	180
tgcacagcaa	cgcttcatgt	caaaagtcga	gctcaagcat	gcacgcgatg	gacgcggcgc	240
gaatgacccg	ggcggcacga	cgcgagtgc	cgccgcgcc	gcccgcctgc	cccgcagccg	300
acctctccca	aacgggacaa	gcgagacggc	ccaaaacgag	caaggaaagc	agcctcctac	360
tgtggcagcc	cgccccacg	accgtcatct	cacctccat	tccattttcc	ctggacggac	420
cagaccgctc	cgagccgccc	tgacctagcc	agccagcatt	tcctctttcg	tccccgcgcg	480
ccgtgaccaa	aaaagcaaaa	aaggaaaaag	ggaaaatgct	aaaggaaaaa	actccgctct	540
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tgtggctgca	ggaccgcggg	gccccgcggg	gcgggcccgg	ccaatgggtg	ctcgacagcg	780
gctatgctcc	agaccagccc	ggtattgcat	accgcgctcg	gggccagatc	cctttaaaaa	840
ccccctcccc	cctgccggaa	ccctcgtttt	ggcctggcca	tcctccctct	cctccccctc	900
cttccacctc	acccaaccac	ctgatagcca	tggtccgcc	gcctcgctc	cgcctgcgcc	960
agtcggagta	gccgtcgcgg	tctgcggggtg	ttggagggtg	ggggcgtagg	gttggcccg	1020
ttctcgagcg	gagatg					1036

<210> 13

<211> 209

<212> DNA

<213> *Triticum monococcum*

<400> 13

atccctttta	aaacccctcc	ccccctgccg	gaaccctcgt	tttggcctgg	ccatccctccc	60
tctcctcccc	tctcttccac	ctcaccacac	cacctgatag	ccatggctcc	gccgcctcgc	120
ctccgcctgc	gccagtcgga	gtagccgtcg	cggctctgcg	gtgttgagg	gtaggggcgt	180
agggttggcc	cggttctcga	gcggagatg				209

<210> 14

<211> 189

<212> DNA

<213> *Triticum monococcum*

<400> 14

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ctcacccaac cacctgatag ccatggctcc gccgcctcgc ctccgcctgc gccagtcgga 120
gtagccgtcg cggctctgcgg gtgttggagg gtaggggctg agggttggcc cggttctcga 180
gcggagatg                                     189
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<210> 15

<211> 162

<212> DNA

<213> *Triticum monococcum*

<400> 15

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tccgcgcct cgctccgcc tgcgccagtc ggagtagccg tcgcggtctg cgggtgttgg 120
agggtagggg cgtagggttg gcccggttct cgagcggaga tg 162
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<210> 16

<211> 175

<212> DNA

<213> *Triticum monococcum*

<400> 16

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atcccttttg gcttgccat cctccctctc ctccctctc ttccacctca cccaaccacc 60
tgatagccat ggctccgcc cctcgctcc gctgcgcca gtcggagtag ccgtcgcggg 120
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<210> 17

<211> 208

<212> DNA

<213> *Triticum monococcum*

<400> 17

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ctcctccct ctctccacc tcaccaacc acctgatagc catggctccg ccgcctcgcc 120
tccgcctgcg ccagtcggag tagcgtcgc ggtctgcggg tggtggagg taggggcgta 180
gggttgggcc ggttctcgag cgagatg 208
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<210> 18

<211> 735

<212> DNA

<213> *Hordeum vulgare*

<400> 18

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gccgaggtcg gcctcatcat cttctccacc aagggaagc tctacgagtt ctccaccgag 180
tcatgtatgg acaaaattct tgaacggtat gagcgctact cttatgcaga aaaggttctc 240
gtttcaagt aatctgaaat tcagggaac tgggtgtcacg aatataggaa actgaaggcg 300
aagggtgaga caatacagaa atgtcaaaag catctcatgg gagaggatct tgaatctttg 360
aatctcaagg agttgcagca actggagcag cagctggaaa gctcactgaa acatatcaga 420
gccaggaaga accaacttat gcacgaatcc atttctgagc ttcagaagaa ggagaggtca 480
ctgcaggagg agaataaagt tctccagaag gaacttgttg agaagcagaa ggcccaggcg 540
gcgcagcaag atcaaaactca gcctcaaacc agctcttctt cttcttcctt catgatgagg 600
gatgtcctcc ctgtcgcaga taccagcaat caccagcgg cggcaggcga gagggcagag 660
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gatgtggcag tgcagcctca ggtcccactc cggacggcgc ttccactgtg gatggtgagc 720
cacatcaacg gctga 735

<210> 19
<211> 244
<212> PRT
<213> Hordeum vulgare

<400> 19
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20 25 30
His Glu Ile Ser Val Leu Tyr Asp Ala Glu Val Gly Leu Ile Ile Phe
35 40 45
Ser Thr Lys Gly Lys Leu Tyr Glu Phe Ser Thr Glu Ser Cys Met Asp
50 55 60
Lys Ile Leu Glu Arg Tyr Glu Arg Tyr Ser Tyr Ala Glu Lys Val Leu
65 70 75 80
Val Ser Ser Glu Ser Glu Ile Gln Gly Asn Trp Cys His Glu Tyr Arg
85 90 95
Lys Leu Lys Ala Lys Val Glu Thr Ile Gln Lys Cys Gln Lys His Leu
100 105 110
Met Gly Glu Asp Leu Glu Ser Leu Asn Leu Lys Glu Leu Gln Gln Leu
115 120 125
Glu Gln Gln Leu Glu Ser Ser Leu Lys His Ile Arg Ala Arg Lys Asn
130 135 140
Gln Leu Met His Glu Ser Ile Ser Glu Leu Gln Lys Lys Glu Arg Ser
145 150 155 160
Leu Gln Glu Glu Asn Lys Val Leu Gln Lys Glu Leu Val Glu Lys Gln
165 170 175
Lys Ala Gln Ala Ala Gln Gln Asp Gln Thr Gln Pro Gln Thr Ser Ser
180 185 190
Ser Ser Ser Ser Phe Met Met Arg Asp Ala Pro Pro Val Ala Asp Thr
195 200 205
Ser Asn His Pro Ala Ala Ala Gly Glu Arg Ala Glu Asp Val Ala Val
210 215 220
Gln Pro Gln Val Pro Leu Arg Thr Ala Leu Pro Leu Trp Met Val Ser
225 230 235 240
His Ile Asn Gly

<210> 20
<211> 244
<212> PRT
<213> Triticum monococcum

<400> 20
Met Gly Arg Gly Lys Val Gln Leu Lys Arg Ile Glu Asn Lys Ile Asn
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Arg Gln Val Thr Phe Ser Lys Arg Arg Ser Gly Leu Leu Lys Lys Ala
20 25 30
His Glu Ile Ser Val Leu Cys Asp Ala Glu Val Gly Leu Ile Ile Phe
35 40 45
Ser Thr Lys Gly Lys Leu Tyr Glu Phe Ser Thr Glu Ser Cys Met Asp
50 55 60

Lys Ile Leu Glu Arg Tyr Glu Arg Tyr Ser Tyr Ala Glu Lys Val Leu
 65 70 75 80
 Val Ser Ser Glu Ser Glu Ile Gln Gly Asn Trp Cys His Glu Tyr Arg
 85 90 95
 Lys Leu Lys Ala Lys Val Glu Thr Ile Gln Lys Cys Gln Lys His Leu
 100 105 110
 Met Gly Glu Asp Leu Glu Ser Leu Asn Leu Lys Glu Leu Gln Gln Leu
 115 120 125
 Glu Gln Gln Leu Glu Ser Ser Leu Lys His Ile Arg Ser Arg Lys Asn
 130 135 140
 Gln Leu Met His Glu Ser Ile Ser Glu Leu Gln Lys Lys Glu Arg Ser
 145 150 155 160
 Leu Gln Glu Glu Asn Lys Val Leu Gln Lys Glu Leu Val Glu Lys Gln
 165 170 175
 Lys Ala Gln Ala Ala Gln Gln Asp Gln Thr Gln Pro Gln Thr Ser Ser
 180 185 190
 Ser Ser Ser Ser Phe Met Met Arg Asp Ala Pro Pro Ala Ala Ala Thr
 195 200 205
 Ser Ile His Pro Ala Ala Ala Gly Glu Arg Ala Gly Asp Ala Ala Val
 210 215 220
 Gln Pro Gln Ala Pro Pro Arg Thr Gly Leu Pro Leu Trp Met Val Ser
 225 230 235 240
 His Ile Asn Gly

<210> 21

<211> 245

<212> PRT

<213> *Lolium temulentum*

<400> 21

Met Gly Arg Gly Lys Val Gln Leu Lys Arg Ile Glu Asn Lys Ile Asn
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 Arg Gln Val Thr Phe Ser Lys Arg Arg Ser Gly Leu Leu Lys Lys Ala
 20 25 30
 His Glu Ile Ser Val Leu Cys Asp Ala Glu Val Gly Leu Ile Ile Phe
 35 40 45
 Ser Thr Lys Gly Lys Leu Tyr Glu Phe Ala Thr Asp Ser Cys Met Asp
 50 55 60
 Lys Ile Leu Glu Arg Tyr Glu Arg Tyr Ser Tyr Ala Glu Lys Val Leu
 65 70 75 80
 Ile Ser Thr Glu Ser Glu Ile Gln Gly Asn Trp Cys His Glu Tyr Arg
 85 90 95
 Lys Leu Lys Ala Lys Val Glu Thr Ile Gln Arg Cys Gln Lys His Leu
 100 105 110
 Met Gly Glu Asp Leu Glu Ser Leu Asn Leu Lys Glu Leu Gln Gln Leu
 115 120 125
 Glu Gln Gln Leu Glu Ser Ser Leu Lys His Ile Arg Ser Arg Lys Ser
 130 135 140
 Gln Leu Met His Glu Ser Ile Ser Glu Leu Gln Lys Lys Glu Arg Ser
 145 150 155 160
 Leu Gln Glu Glu Asn Lys Ile Leu Gln Lys Glu Leu Ile Glu Lys Gln
 165 170 175
 Lys Ala His Thr Gln Gln Ala Gln Leu Glu Gln Thr Gln Pro Gln Thr
 180 185 190
 Ser Ser Ser Ser Ser Ser Phe Met Met Gly Glu Ala Thr Pro Ala Thr

	195		200		205										
Asn	Arg	Ser	Asn	Pro	Pro	Ala	Ala	Ala	Ser	Asp	Arg	Ala	Glu	Asp	Ala
	210					215					220				
Thr	Gly	Gln	Pro	Pro	Ala	Arg	Thr	Val	Leu	Pro	Pro	Trp	Met	Val	Ser
225					230					235					240
His	Leu	Asn	Asn	Gly											
				245											

<210> 22
 <211> 1207
 <212> DNA
 <213> *Lolium temulentum*

<400> 22
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 ttccagggag ggaggcgaga tggggcgcgg caaggtgcag ctcaagcgga tcgagaacaa 180
 gatcaaccgc caggtcacct tctccaagcg ccgtcaggc ctgctcaaga aggcgcacga 240
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 ctatgcagag aaagtgtca tttcaactga atctgaaatt cagggaaact ggtgtcatga 420
 atatagggaa ctgaaggcga aggttgagac aatacagaga tgtcaaaagc atctaattggg 480
 agaggatctt gaatcattga atctcaagga gttgcagcaa ctagagcagc agctggaaag 540
 ttcactgaaa catattagat ccagaaagag ccagcttatg cacgaatcca tatctgagct 600
 tcaaaagaag gagaggtcac tgcaagagga gaataaaatt ctccagaagg aactcataga 660
 gaagcagaag gccacacgc agcaagcgca gttggagcaa actcagcccc aaaccagctc 720
 ttctctctcc tcttttatga tgggggaagc taccacagca acaaatcgca gtaatcccc 780
 agcagcggcc agcgacagag cagaggatgc gacggggcag cctccagctc gcacgggtgct 840
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 cgtattatcc agtacgtgta gcgagctgca ccggcctgtc ttgtgggtgc ctagcaagct 960
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 ctgttctgct cagtttccct cctgcgtgag ctgacttcac gtaagagtta tttaacttgt 1080
 aatacatgtg tagcgtgagt gacaaatctt ccactttcta cgaccctctt gggtaccgtc 1140
 tgtttctgtg aattaaacta tccaatatca gtattatgta tattgtgatt gttgaaaaaa 1200
 aaaaaaa 1207

<210> 23
 <211> 11
 <212> DNA
 <213> *T. monococcum*

<400> 23
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<210> 24
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 24
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<210> 25

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 25
ttggcattat tggaccatca 20

<210> 26
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 26
ctgacctggg gccttgagag 20

<210> 27
<211> 20
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<213> Artificial Sequence

<220>
<223> Primer

<400> 27
cttcgcatca gcagctctat 20

<210> 28
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 28
ccatggataa tcatcgggag 20

<210> 29
<211> 20
<212> DNA
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<220>
<223> Primer

<400> 29
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<210> 76

<211> 213

<212> PRT

<213> Triticum monococcum

<400> 76

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<210> 77

<211> 187

<212> PRT

<213> Triticum monococcum

<400> 77

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<210> 78

<211> 2913

<212> DNA

<213> *Triticum dicoccoides*

<400> 78

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<210> 79

<211> 975

<212> DNA

<213> *Triticum dicoccoides*

<400> 79

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<210> 80

<211> 206

<212> PRT

<213> *Triticum dicoccoides*

<400> 80

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35          40          45
Pro Val Pro Leu Pro Pro Ala Asn Phe Asp His Ser Arg Thr Trp Thr
50          55          60
Thr Pro Phe His Glu Thr Ala Ala Ala Gly Asn Ser Ser Arg Leu Thr
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Cys	Phe	Val	Lys	Val	Pro	Glu	Ala	Met	Ala	Ser	Pro	Ser	Ser	Pro	Ala
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<210> 81

<211> 5734

<212> DNA

<213> *Triticum monococcum*

<400> 81

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<210> 82
<211> 639
<212> DNA
<213> Triticum monococcum

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<210> 83
<211> 212
<212> PRT
<213> Triticum monococcum

<400> 83
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35 40 45
Ala Asp Tyr Pro Pro Pro Pro Pro Pro Ser Ala Asn Cys His His Cys
50 55 60
Arg Ser Trp Thr Thr Pro Phe His Glu Thr Ala Ala Ala Gly Asn Ser
65 70 75 80
Ser Arg Leu Thr Leu Glu Val Asp Ala Gly Gly Gln Asn Met Ala His
85 90 95
Leu Leu Gln Pro Pro Ala Arg Pro Arg Thr Thr Ile Val Pro Phe Cys
100 105 110
Gly Ala Ala Phe Thr Ser Thr Ile Ser Asn Ala Thr Ile Met Thr Ile
115 120 125
Asp Thr Glu Met Met Val Gly Ala Ala His Asn Leu Thr Met Gln Glu
130 135 140
Arg Glu Ala Lys Val Met Arg Tyr Arg Glu Lys Arg Lys Arg Arg Cys
145 150 155 160
Tyr Asp Lys Gln Ile Arg Tyr Glu Ser Arg Lys Ala Tyr Ala Glu Leu
165 170 175
Arg Pro Arg Val Asn Gly Cys Phe Val Lys Val Pro Glu Ala Ala Ala
180 185 190
Ser Ser Ser Pro Pro Ala Ser Pro Tyr Asp Pro Ser Lys Leu His Leu
195 200 205
Gly Trp Phe Gln
210

<210> 84
 <211> 3454
 <212> DNA
 <213> *Triticum dicoccoides*

<400> 84
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<210> 85

<211> 639

<212> DNA

<213> Triticum dicoccoides

<400> 85

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<210> 86

<211> 212

<212> PRT

<213> Triticum dicoccoides

<400> 86

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Tyr Gln Phe Phe Thr Gln Gly His His His His His His Asp Ala Ala
          35          40          45
Ala Asp Tyr Pro Pro Pro Pro Pro Pro Ser Ala Asn Cys His His Cys
          50          55          60
Arg Ser Trp Thr Thr Pro Phe His Glu Thr Ala Ala Ala Gly Asn Ser
65          70          75          80
Ser Arg Leu Thr Leu Glu Val Asp Ala Gly Gly Gln Asn Met Ala His
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Leu Leu Gln Pro Pro Ala Arg Pro Arg Thr Thr Ile Val Pro Phe Cys
          100          105          110
Gly Ala Ala Phe Thr Ser Thr Ile Ser Asn Ala Thr Ile Met Thr Ile
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Asp Thr Glu Met Met Val Gly Ala Ala His Asn Leu Thr Met Gln Glu
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Arg Glu Ala Lys Val Met Arg Tyr Arg Glu Lys Arg Lys Arg Arg Cys
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Tyr Asp Lys Gln Ile Arg Tyr Glu Ser Arg Lys Ala Tyr Ala Glu Leu
          165          170          175
Arg Pro Arg Val Asn Gly Arg Phe Val Lys Val Pro Glu Ala Ala Ala

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Gly Trp Phe Arg					
210					

<210> 87
 <211> 1985
 <212> DNA
 <213> *Hordeum vulgare*

<400> 87

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<210> 88
 <211> 639
 <212> DNA
 <213> *Hordeum vulgare*

<400> 88

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<210> 89

<211> 213

<212> PRT

<213> Hordeum vulgare

<400> 89

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<211> 2043

<212> DNA

<213> Hordeum vulgare

<220>

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1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261,
1262, 1263, 1264, 1265, 1294, 1300, 1313, 1326, 1340

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<221> misc_feature
 <222> 1359, 1385
 <223> n = A,T,C or G

<400> 90

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gctgcgtcac catcaccccc agcttcgccc catgatccta gtgaacttca cctcggatgg 2040
ttc 2043
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<210> 91
 <211> 642
 <212> DNA
 <213> *Hordeum vulgare*

<400> 91

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atgtccatgg catgcggttt gtgcggcgcc agcaattgcc cgtatcacat gatgtcgccc 60
gttcttcttc atcatcacca tcatcaggaa catcggcagc gcgagtacca gttcttcgcc 120
caaggtcacc accaccacca ccacggcgcg gcagcagact acccaccgcc acagccaccg 180
ccggccaatt gccaccaccg cagatcatgg gccacgctgt ttcattgaaac agcagctcca 240
gtgaatagca ccaggctcac acaagaggtg gacgcaggcg gccaacagat ggctcacctg 300
ctgcagccac cggcgccgcc aagagccacc atcgtgccat tccgcccggag tgcattcacc 360
aacactatta gcaacgcaac gatcatgact attgatacag agatgatggc ggggactgcc 420
tatagtccaa cgatgcagga aagagaagca aaggtgatga ggtacaggga gaagaggaa 480
aagcggcgct atgacaagca aatccgctac gagtccagaa aagcttacgc cgagcttagg 540
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ccacgggtca acggccgctt tgtcaaggta cctgaagccg ctgcgtcacc atcaccccca 600
gcttcgcccc atgatacctag tgaacttcac ctcggatggt tc 642

<210> 92
<211> 214
<212> PRT
<213> Hordeum vulgare

<400> 92
Met Ser Met Ala Cys Gly Leu Cys Gly Ala Ser Asn Cys Pro Tyr His
1 5 10 15
Met Met Ser Pro Val Leu Leu His His His His Gln Glu His Arg
20 25 30
Gln Arg Glu Tyr Gln Phe Phe Ala Gln Gly His His His His His His
35 40 45
Gly Ala Ala Ala Asp Tyr Pro Pro Pro Gln Pro Pro Pro Ala Asn Cys
50 55 60
His His Arg Arg Ser Trp Ala Thr Leu Phe His Glu Thr Ala Ala Pro
65 70 75 80
Val Asn Ser Thr Arg Leu Thr Gln Glu Val Asp Ala Gly Gly Gln Gln
85 90 95
Met Ala His Leu Leu Gln Pro Pro Ala Pro Pro Arg Ala Thr Ile Val
100 105 110
Pro Phe Arg Arg Ser Ala Phe Thr Asn Thr Ile Ser Asn Ala Thr Ile
115 120 125
Met Thr Ile Asp Thr Glu Met Met Ala Gly Thr Ala Tyr Ser Pro Thr
130 135 140
Met Gln Glu Arg Glu Ala Lys Val Met Arg Tyr Arg Glu Lys Arg Lys
145 150 155 160
Lys Arg Arg Tyr Asp Lys Gln Ile Arg Tyr Glu Ser Arg Lys Ala Tyr
165 170 175
Ala Glu Leu Arg Pro Arg Val Asn Gly Arg Phe Val Lys Val Pro Glu
180 185 190
Ala Ala Ala Ser Pro Ser Pro Pro Ala Ser Pro His Asp Pro Ser Glu
195 200 205
Leu His Leu Gly Trp Phe
210

<210> 93
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 93
ccaacacatg gctcacctag tg 22

<210> 94
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 94
 aaatggcacg atgtgggctc ttgcc 25

 <210> 95
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 95
 ttgcttcatt gctaatagtg ttggt 25

 <210> 96
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 96
 ccaccactgc agatcatgga 20

 <210> 97
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 97
 ccaagaacca ccatcgtgcc attctg 26

 <210> 98
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 98
 ttgctaatag tgctggtgaa tgc 23

 <210> 99
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 99

ggctccaatc gatcaatcac	20
<210> 100	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 100	
ttcttcctcg acgtctctcc	20
<210> 101	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 101	
tgaggcgcg ggcagttgttg	20
<210> 102	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 102	
ggttaagctt gggggagaag	20
<210> 103	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 103	
gttgagtggc cctgtttctc	20
<210> 104	
<211> 22	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 104	
cattgatcag cctaaccaaa ca	22

<210> 105
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 105
 caaattctaa tccccaatcc aa 22

<210> 106
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 106
 ggcggttaagg atctgagcta 20

<210> 107
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 107
 agtgggtcta gagtccctgct t 21

<210> 108
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 108
 ggcggttaagg atctgagcta 20

<210> 109
 <211> 217
 <212> DNA
 <213> Triticum monococcum

<400> 109
 atcccttttaa aaacccctcc cccctgcgc gaatcctcgt tttggcctgg ccatacctccc 60
 tctcctcccc tctcttccac ctacgtcct caccacaacca cctgatagcc atggctccgc 120
 cgctcgcct ccgctgcgc cagtcggagt agccgtcgcg gtctgcgggt gttggagggt 180
 aggggcgtag ggttggcccg gttctcgagc ggagatg 217

<210> 110
 <211> 210

<212> DNA

<213> Triticum monococcum

<400> 110

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atccctttaa aaacccctcc cccacttgc cggaaacctc gttttggcct ggccatcctc 60
cctctcctcc ctctcttccg cctcacccaa ccacctgaca gccatggctc cgcccccccg 120
ccccgcctg cgctgtcgg agtagccgtc gcggtctgcc ggtgttgagg gcttgggggtg 180
tagggttggc cccgttctcc agcggagatg 210
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<210> 111

<211> 201

<212> DNA

<213> Triticum monococcum

<400> 111

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atccctttaa aaacccctcc cccctgccg gaacctcgt tttggcctgg ccatectccc 60
tctcctcccc ctctcttcca accacctgac agccatggct ccgccccctc gcctccgcct 120
gcgctgtcg gagtagccgt cgcggtctgc cgggtgttga gggtaggggc gtaggggttg 180
cccggttctc gagcggagat g 201
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<210> 112

<211> 357

<212> DNA

<213> Triticum monococcum

<400> 112

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atccctttaa aaaccggaaa aaaattatat gagaccaggt ctcatataaa tcaggtgaga 60
cccgccctga tgaatgacat gtggcattca caaatcacia agcatctaata ctctcccccc 120
ctgatttcag gtgggggggtg ttttccttaa aaacccctcc cccctgccg gaatcctcgt 180
tttggcctgg ccatectccc tctcctcccc tctcttccac ctcacgtcct caccacaacca 240
cctgatagcc atggctccgc cgcctcgcc cgcctgcgc cagtcggagt agccgtcgcg 300
gtctgcgggt gttggagggt aggggcgtag ggttggcccg gttctcgagc ggagatg 357
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<210> 113

<211> 269

<212> DNA

<213> Triticum monococcum

<400> 113

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atccctttaa aaaccggaaa aaaattctat gagaccaggt ctcatagaat ttttttcctt 60
aaaaacccct cccccctgc cggaatcctc gttttggcct ggccatcctc cctctcctcc 120
cctctcttcc acctcacgtc ctcacccaac cacctgatag ccatggctcc gccgcctcgc 180
ctccgcctgc gccagtcgga gtagccgtcg cggctctgcg gtgttgagg gtaggggcgt 240
agggttggcc cggttctcga gcggagatg 269
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<210> 114

<211> 195

<212> DNA

<213> Triticum monococcum

<400> 114

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atcccttaaa atcccccccc cctgccgga atcctcgttt tggcctggcc atcctcacct 60
cacgtcctca cccaaccacc tgatagccat ggctccgccc cctcgccctc gcctgcgcca 120
gtcggagtag ccgtcgcggg ctgcgggtgt tggagggtag gggcgtaggg ttggcccggt 180
tctcgagcgg agatg 195
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<210> 115

<211> 165
 <212> DNA
 <213> Triticum monococcum

<400> 115
 atcctcggtt tggcctggcc atcctcacct cagtcctca cccaaccacc tgatagccat 60
 ggctccgccc cctcgctccc gctcgccca gtcggagtag ccgtcgcggt ctgcggggtgt 120
 tggagggtag gggcgtaggg ttggcccggg tctcgagcgg agatg 165

<210> 116
 <211> 161
 <212> DNA
 <213> Triticum monococcum

<400> 116
 atccctttta aaacccctcc cccccctgc cggaccctc gttttggcct ggccatcctc 60
 cctctcctcc cctctcttcc acctcaccca accaccccggt cgcgggtctgc cgggtgttga 120
 gggtaggggc gtaggggtgg cccggtttcc gagcggagat g 161

<210> 117
 <211> 44
 <212> PRT
 <213> Triticum monococcum

<400> 117
 Glu Arg Ala Ala Lys Val Met Arg Tyr Arg Glu Lys Arg Lys Arg Arg
 1 5 10 15
 Arg Tyr Asp Lys Gln Ile Arg Tyr Glu Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Leu Arg Pro Arg Val Asn Gly Arg Phe Val Lys Val
 35 40

<210> 118
 <211> 44
 <212> PRT
 <213> Triticum monococcum

<400> 118
 Glu Arg Ala Ala Lys Val Met Arg Tyr Arg Glu Lys Arg Lys Arg Arg
 1 5 10 15
 Arg Tyr Asp Lys Gln Ile Arg Tyr Glu Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Leu Arg Pro Arg Val Asn Gly Arg Phe Val Lys Val
 35 40

<210> 119
 <211> 44
 <212> PRT
 <213> Triticum dicoccoides

<400> 119
 Glu Arg Ala Ala Lys Val Met Arg Tyr Arg Glu Lys Arg Lys Arg Arg
 1 5 10 15
 Arg Tyr Asp Lys Gln Ile Arg Tyr Glu Ser Arg Lys Ala Tyr Ala Glu
 20 25 30

Leu Arg Pro Arg Val Asn Gly Cys Phe Val Lys Val
 35 40

<210> 120
 <211> 44
 <212> PRT
 <213> Triticum monococcum

<400> 120
 Glu Arg Glu Ala Lys Val Met Arg Tyr Arg Glu Lys Arg Lys Arg Arg
 1 5 10 15
 Cys Tyr Asp Lys Gln Ile Arg Tyr Glu Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Leu Arg Pro Arg Val Asn Gly Cys Phe Val Lys Val
 35 40

<210> 121
 <211> 44
 <212> PRT
 <213> Triticum dicoccoides

<400> 121
 Glu Arg Glu Ala Lys Val Met Arg Tyr Arg Glu Lys Arg Lys Arg Arg
 1 5 10 15
 Cys Tyr Asp Lys Gln Ile Arg Tyr Glu Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Leu Arg Pro Arg Val Asn Gly Arg Phe Val Lys Val
 35 40

<210> 122
 <211> 44
 <212> PRT
 <213> Hordeum vulgare

<400> 122
 Glu Arg Glu Ala Lys Val Met Arg Tyr Arg Glu Lys Arg Lys Lys Arg
 1 5 10 15
 Arg Tyr Asp Lys Gln Ile Arg Tyr Glu Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Leu Arg Pro Arg Val Asn Gly Arg Phe Val Lys Val
 35 40

<210> 123
 <211> 44
 <212> PRT
 <213> Hordeum vulgare

<400> 123
 Glu Arg Glu Ala Lys Val Met Arg Tyr Arg Glu Lys Arg Lys Arg Arg
 1 5 10 15
 Arg Tyr Asp Lys Gln Ile Arg Tyr Glu Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Leu Arg Pro Arg Val Asn Gly Arg Phe Ala Lys Val

35

40

<210> 124
 <211> 44
 <212> PRT
 <213> *Oryza sativa*

<400> 124
 Glu Arg Glu Ala Lys Leu Met Arg Tyr Lys Glu Lys Arg Lys Lys Arg
 1 5 10 15
 Cys Tyr Glu Lys Gln Ile Arg Tyr Ala Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Met Arg Pro Arg Val Arg Gly Arg Phe Ala Lys Glu
 35 40

<210> 125
 <211> 44
 <212> PRT
 <213> *Hordeum vulgare*

<400> 125
 Leu Arg Glu Ala Lys Leu Met Arg Tyr Lys Glu Lys Arg Lys Arg Arg
 1 5 10 15
 Arg Tyr Glu Lys Gln Ile Arg Tyr Ala Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Met Arg Pro Arg Val Lys Gly Arg Phe Ala Lys Val
 35 40

<210> 126
 <211> 43
 <212> PRT
 <213> *Oryza sativa*

<400> 126
 Asp Arg Glu Ala Lys Val Met Arg Tyr Lys Glu Lys Arg Lys Arg Arg
 1 5 10 15
 Arg Tyr Glu Lys Gln Ile Arg Tyr Ala Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Met Arg Pro Arg Val Lys Gly Arg Phe Ala Lys
 35 40

<210> 127
 <211> 44
 <212> PRT
 <213> *Arabidopsis thaliana*

<400> 127
 Asp Arg Glu Ala Arg Val Leu Arg Tyr Arg Glu Lys Arg Lys Thr Arg
 1 5 10 15
 Lys Phe Glu Lys Thr Ile Arg Tyr Ala Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Ile Arg Pro Arg Val Asn Gly Arg Phe Ala Lys Arg
 35 40

<210> 128
 <211> 44
 <212> PRT
 <213> Oryza sativa

<400> 128
 Asp Arg Glu Ala Arg Val Leu Arg Tyr Arg Glu Lys Lys Lys Ala Arg
 1 5 10 15
 Lys Phe Glu Lys Thr Ile Arg Tyr Glu Thr Arg Lys Ala Tyr Ala Glu
 20 25 30
 Ala Arg Pro Arg Ile Lys Gly Arg Phe Ala Lys Arg
 35 40

<210> 129
 <211> 44
 <212> PRT
 <213> Hordeum vulgare

<400> 129
 Glu Arg Glu Ala Arg Val Leu Arg Tyr Lys Glu Lys Lys Lys Ser Arg
 1 5 10 15
 Lys Phe Glu Lys Thr Thr Arg Tyr Ala Thr Arg Lys Ala Tyr Ala Glu
 20 25 30
 Ala Arg Pro Arg Ile Lys Gly Arg Phe Ala Lys Arg
 35 40

<210> 130
 <211> 44
 <212> PRT
 <213> Hordeum vulgare

<400> 130
 Asp Arg Glu Ala Arg Val His Arg Tyr Arg Glu Lys Arg Lys Met Arg
 1 5 10 15
 Arg Phe Glu Lys Thr Ile Arg Tyr Ala Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Thr Arg Pro Arg Ile Lys Gly Arg Phe Ala Lys Arg
 35 40

<210> 131
 <211> 44
 <212> PRT
 <213> Oryza sativa

<400> 131
 Asp Arg Glu Ala Arg Val His Arg Tyr Arg Glu Lys Arg Lys Thr Arg
 1 5 10 15
 Arg Phe Glu Lys Thr Ile Arg Tyr Ala Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Thr Arg Pro Arg Ile Lys Gly Arg Phe Ala Lys Arg
 35 40

<210> 132
 <211> 44
 <212> PRT
 <213> Hordeum vulgare

<400> 132
 Glu Arg Glu Ala Arg Leu Met Arg Tyr Arg Glu Lys Arg Lys Ser Arg
 1 5 10 15
 Arg Phe Glu Lys Thr Ile Arg Tyr Ala Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Thr Arg Pro Arg Val Lys Gly Arg Phe Ala Lys Arg
 35 40

<210> 133
 <211> 44
 <212> PRT
 <213> Oryza sativa

<400> 133
 Glu Arg Glu Ala Arg Leu Met Arg Tyr Arg Glu Lys Arg Lys Ser Arg
 1 5 10 15
 Arg Phe Glu Lys Thr Ile Arg Tyr Ala Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Thr Arg Pro Arg Ile Lys Gly Arg Phe Ala Lys Arg
 35 40

<210> 134
 <211> 44
 <212> PRT
 <213> Arabidopsis thaliana

<400> 134
 Glu Arg Glu Ala Arg Val Leu Arg Tyr Arg Glu Lys Arg Lys Asn Arg
 1 5 10 15
 Lys Phe Glu Lys Thr Ile Arg Tyr Ala Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Met Arg Pro Arg Ile Lys Gly Arg Phe Ala Lys Arg
 35 40

<210> 135
 <211> 44
 <212> PRT
 <213> Hordeum vulgare

<400> 135
 Gly Arg Glu Ala Arg Leu Met Arg Tyr Arg Glu Lys Arg Lys Asn Arg
 1 5 10 15
 Arg Phe Glu Lys Thr Ile Arg Tyr Ala Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Ser Arg Pro Arg Val Lys Gly Arg Phe Ala Lys Arg
 35 40

<210> 136
 <211> 44
 <212> PRT
 <213> *Oryza sativa*

<400> 136
 Gly Arg Ala Ala Arg Leu Met Arg Tyr Arg Glu Lys Arg Lys Asn Arg
 1 5 10 15
 Arg Phe Glu Lys Thr Ile Arg Tyr Ala Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Thr Arg Pro Arg Val Lys Gly Arg Phe Ala Lys Arg
 35 40

<210> 137
 <211> 44
 <212> PRT
 <213> *Hordeum vulgare*

<400> 137
 Asp Gly Ala Ala Arg Val Met Arg Tyr Arg Glu Lys Arg Lys Asn Arg
 1 5 10 15
 Lys Phe His Lys Thr Ile Arg Tyr Ala Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Ala Arg Pro Arg Leu Lys Gly Arg Phe Val Lys Arg
 35 40

<210> 138
 <211> 44
 <212> PRT
 <213> *Oryza sativa*

<400> 138
 Ala Arg Glu Glu Arg Val Met Arg Tyr Arg Glu Lys Arg Lys Asn Arg
 1 5 10 15
 Lys Phe His Lys Thr Ile Arg Tyr Ala Ser Arg Lys Ala Tyr Ala Glu
 20 25 30
 Ala Arg Pro Arg Leu Lys Gly Arg Phe Val Lys Arg
 35 40

<210> 139
 <211> 44
 <212> PRT
 <213> *Arabidopsis thaliana*

<400> 139
 Gly Arg Glu Ala Arg Val Ser Arg Tyr Arg Glu Lys Arg Arg Thr Arg
 1 5 10 15
 Leu Phe Ser Lys Lys Ile Arg Tyr Glu Val Arg Lys Leu Asn Ala Glu
 20 25 30
 Lys Arg Pro Arg Met Lys Gly Arg Phe Val Lys Arg
 35 40

<210> 140

<211> 44
 <212> PRT
 <213> *Oryza sativa*

<400> 140
 Glu Arg Glu Ala Arg Val Ser Arg Tyr Arg Glu Lys Arg Arg Thr Arg
 1 5 10 15
 Leu Phe Ala Lys Lys Ile Arg Tyr Glu Val Arg Lys Leu Asn Ala Glu
 20 25 30
 Lys Arg Pro Arg Met Lys Gly Arg Phe Val Lys Arg
 35 40

<210> 141
 <211> 44
 <212> PRT
 <213> *Arabidopsis thaliana*

<400> 141
 Thr Arg Asn Asn Ala Val Met Arg Tyr Lys Glu Lys Lys Lys Ala Arg
 1 5 10 15
 Lys Phe Asp Lys Arg Val Arg Tyr Ala Ser Arg Lys Ala Arg Ala Asp
 20 25 30
 Val Arg Arg Arg Val Lys Gly Arg Phe Val Lys Ala
 35 40

<210> 142
 <211> 44
 <212> PRT
 <213> *Oryza sativa*

<400> 142
 Ser Arg Asp Asn Ala Leu Thr Arg Tyr Lys Glu Lys Lys Lys Arg Arg
 1 5 10 15
 Lys Phe Asp Lys Lys Ile Arg Tyr Ala Ser Arg Lys Ala Arg Ala Asp
 20 25 30
 Val Arg Lys Arg Val Lys Gly Arg Phe Val Lys Ala
 35 40

<210> 143
 <211> 33
 <212> PRT
 <213> *Triticum dicoccoides*

<400> 143
 Met Ser Met Ser Cys Gly Leu Cys Gly Ala Asn Asn Cys Pro Arg Leu
 1 5 10 15
 Met Val Ser Pro Ile His His Arg His His His His Gln Glu His Gln
 20 25 30
 Leu

<210> 144
 <211> 33

<212> PRT
<213> Triticum monococcum

<400> 144
Met Ser Met Ser Cys Gly Leu Cys Gly Ala Asn Asn Cys Pro Arg Leu
1 5 10 15
Met Val Ser Pro Ile His His His His His His His Gln Glu His Gln
20 25 30
Leu

<210> 145
<211> 33
<212> PRT
<213> Triticum monococcum

<400> 145
Met Ser Met Ser Cys Gly Leu Cys Gly Ala Asn Asn Cys Pro Arg Leu
1 5 10 15
Met Val Ser Pro Ile His His His His His His His Gln Glu His Gln
20 25 30
Leu

<210> 146
<211> 33
<212> PRT
<213> Hordeum vulgare

<400> 146
Met Ser Met Ala Cys Gly Leu Cys Gly Ala Ser Asn Cys Pro Tyr His
1 5 10 15
Met Met Ser Pro Val Leu Leu His His His His His Gln Glu His Arg
20 25 30
Gln

<210> 147
<211> 33
<212> PRT
<213> Hordeum vulgare

<400> 147
Met Ser Met Ser Cys Gly Leu Cys Gly Ala Ser Asn Cys Ala Tyr His
1 5 10 15
Met Met Ser Pro Val Leu Leu His His His His His Gln Glu His Pro
20 25 30
Leu

<210> 148
<211> 33
<212> PRT

<213> Triticum dicoccoides

<400> 148

Met	Ser	Met	Ser	Cys	Gly	Leu	Cys	Gly	Ala	Ser	Asn	Cys	Pro	His	His
1				5				10					15		
Met	Ile	Ser	Pro	Val	Leu	Gln	His	His	Gln	His	His	Gln	Glu	His	Arg
			20				25						30		
Leu															

<210> 149

<211> 33

<212> PRT

<213> Triticum monococcum

<400> 149

Met	Ser	Met	Ser	Cys	Gly	Leu	Cys	Gly	Ala	Ser	Asp	Cys	Pro	His	His
1				5				10					15		
Met	Ile	Ser	Pro	Val	Leu	Gln	His	Gln	Glu	Gln	His	Trp	Leu	Arg	Glu
			20				25						30		
Tyr															

<210> 150

<211> 33

<212> PRT

<213> Triticum dicoccoides

<400> 150

Met	Pro	Met	Ser	Cys	Gly	Leu	Cys	Gly	Ala	Ser	Asp	Cys	Pro	His	His
1				5				10					15		
Met	Ile	Ser	Pro	Val	Leu	Gln	His	Gln	Glu	Gln	His	Arg	Leu	Arg	Glu
			20				25						30		
Tyr															

<210> 151

<211> 57

<212> PRT

<213> Oryza sativa

<400> 151

Met	Gly	Met	Ala	Asn	Glu	Glu	Ser	Pro	Asn	Tyr	Gln	Val	Lys	Lys	Gly
1				5				10					15		
Gly	Arg	Ile	Pro	Pro	Arg	Ser	Ser	Leu	Ile	Tyr	Pro	Phe	Met	Ser	Met
			20				25					30			
Gly	Pro	Ala	Ala	Gly	Glu	Gly	Cys	Gly	Leu	Cys	Gly	Ala	Asp	Gly	Gly
		35				40					45				
Gly	Cys	Cys	Ser	Arg	His	Arg	His	Asp							
	50					55									

<210> 152

<211> 28

<212> PRT
<213> Oryza sativa

<400> 152
Met Ser Ala Ala Ser Gly Ala Ala Cys Gly Val Cys Gly Gly Gly Val
1 5 10 15
Gly Glu Cys Gly Cys Leu Leu His Gln Arg Arg Gly
20 25

<210> 153
<211> 49
<212> PRT
<213> Hordeum vulgare

<400> 153
Met Asn Cys Val Ser Asn Gly Thr Val Tyr Glu Glu Ala Val Gly Arg
1 5 10 15
Glu Gly Arg Trp Ala Arg Leu Cys Asp Gly Cys Cys Thr Val Pro Ser
20 25 30
Val Val Tyr Cys Arg Ala Asp Ser Ala Tyr Leu Cys Ala Ser Cys Asp
35 40 45
Ala

<210> 154
<211> 52
<212> PRT
<213> Hordeum vulgare

<400> 154
Met Ile Lys Ala Glu Pro Asp Leu Arg Gly Gln Leu Arg Gly Ser Ala
1 5 10 15
Gly Val Gly Gly Met Gln Leu Gln Gln Arg Cys Asp Ser Cys Arg Ser
20 25 30
Ala Pro Cys Ala Phe Tyr Cys Arg Ala Asp Ser Ala Ala Leu Cys Ala
35 40 45
Ala Cys Asp Ala
50

<210> 155
<211> 46
<212> PRT
<213> Hordeum vulgare

<400> 155
Met Glu Gly Glu Glu Lys Pro Val Val Gly Gly Ala Tyr Trp Gly Val
1 5 10 15
Gly Ala Arg Ala Cys Asp Ser Cys Ala Thr Glu Ala Ala Arg Leu Phe
20 25 30
Cys Arg Ala Asp Ala Ala Phe Leu Cys Ala Gly Cys Asp Ala
35 40 45

<210> 156

<211> 40
 <212> PRT
 <213> Hordeum vulgare

<400> 156
 Arg Ala His Gly Ser Gly Ser Arg His Ala Arg Val Trp Leu Cys Glu
 1 5 10 15
 Val Cys Glu His Ala Pro Ala Ala Val Thr Cys Lys Ala Asp Ala Ala
 20 25 30
 Val Leu Cys Ala Ser Cys Asp Ala
 35 40

<210> 157
 <211> 45
 <212> PRT
 <213> Oryza sativa

<400> 157
 Met Ala Ser Ala Ala Ala Ala Thr Gly Ala Ala Leu Gly Ala Arg Thr
 1 5 10 15
 Ala Arg Ala Cys Asp Gly Cys Met Arg Arg Arg Ala Arg Trp His Cys
 20 25 30
 Pro Ala Asp Asp Ala Phe Leu Cys Gln Ala Cys Asp Ala
 35 40 45

<210> 158
 <211> 54
 <212> PRT
 <213> Oryza sativa

<400> 158
 Met Asp Ala Leu Cys Asp Phe Cys Arg Glu Gln Arg Ser Met Val Tyr
 1 5 10 15
 Cys Arg Ser Asp Ala Ala Ser Leu Cys Leu Ser Cys Asp Arg Asn Val
 20 25 30
 His Ser Ala Asn Ala Leu Ser Arg Arg His Thr Arg Thr Leu Leu Cys
 35 40 45
 Asp Arg Cys Val Gly Gln
 50

<210> 159
 <211> 43
 <212> PRT
 <213> Oryza sativa

<400> 159
 Pro Ala Ala Val Arg Cys Leu Glu Glu Asn Thr Ser Leu Cys Gln Asn
 1 5 10 15
 Cys Asp Trp Asn Gly His Gly Ala Ala Ser Ser Ala Ala Gly His Lys
 20 25 30
 Arg Gln Thr Ile Asn Cys Tyr Ser Gly Cys Pro
 35 40